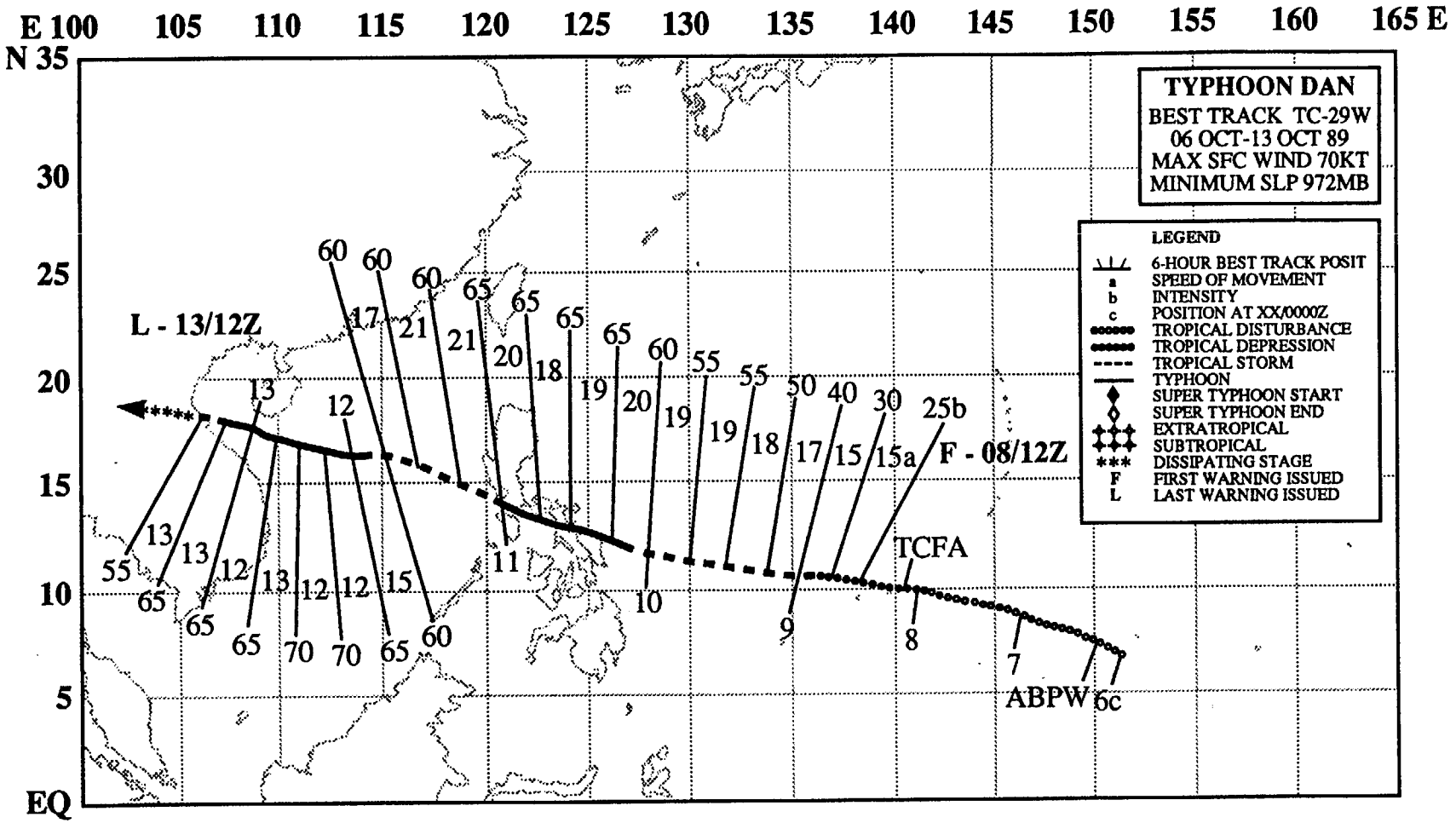
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EQ
TYPHOON DAN
BEST TRACK TC-29W
06 OCT-13 OCT 89
MAX SFC WIND 70KT
MINIMUM SLP 972MB
LEGEND
6-HOUR BEST TRACK POSIT
a SPEED OF MOVEMENT
b INTENSITY
c POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
SUBTROPICAL
*** DISSIPATING STAGE
F FIRST WARNING ISSUED
L LAST WARNING ISSUED
L - 13/12Z
F - 08/12Z
TCFA
ABPW
6c
25b
15a

TYPHOON DAN (29W)

Forming in October in the Caroline Islands near Truk, Dan followed a steady west-northwestward track and crossed the central Philippine Islands. Coming just days after Typhoon Angela's (26W) destructive passage through northern Luzon, Dan had a devastating effect on southern Luzon. The cyclone reintensified in the South China Sea and made landfall on the coast of central Vietnam where it caused more destruction.

On 6 October a disturbance formed in the monsoon trough near Truk in the central Caroline Islands. JTWC evaluated the weak low-level circulation center and its divergent flow aloft. On the Significant Tropical Weather Advisory at 060600Z, in light of strong vertical wind shear affecting the disturbance, JTWC classified it as having poor potential for development. After the disturbance persisted for another day, the potential was upgraded to fair. On 8 October, weaker vertical wind shear and the presence of a well-developed band of convection near the low-level circulation center led to the issuance of a Tropical Cyclone Formation Alert at 0330Z.

At 081200Z , JTWC issued the first warning on Tropical Depression 29W which was located 60 nm (110 km) northeast of Yap in the western Caroline Islands. Eighteen hours later, the depression was upgraded to Tropical Storm Dan. The moderate flow south of the mid-level subtropical ridge axis kept the system on a 15- to 20-kt (28- to 37-km/hr) west-northwestward course toward the central Philippine Islands. Deep convection continued to improve with upper-level outflow efficient in all but the northwest quadrant, where it was restricted by the outflow from Typhoon Angela (26W). After outflow in the northwest improved and the eye become visible, Dan was upgraded to a typhoon at 100600Z.

At 101300Z, Typhoon Dan made landfall on the extreme southeastern coast of Luzon and later passed 20 nm (37 km) south of Manila's Ninoy Aquino International Airport (WMO 98429). The weather station reported sustained winds of 45 kt (23 m/sec) with gusts to 65 kt (33 m/sec). The strong winds rearranged some of the aircraft parked on the tarmac, blowing an Omani Boeing 707 and a Bangladesh presidential DC-10 into each other. Forty-eight nm (90 km) north of Manila, Clark AB (WMO 98327) received winds of 30 kt (15 m/sec) with gusts to 50 kt (26 m/sec) from 110100Z to 110400Z. Cubi Point NAS (WMO 98426), 40 nm (75 km) northwest of Manila, reported sustained winds of 40 kt (21 m/sec) with gusts to 75 kt (39 m/sec). From 100000Z to 120000Z Cubi Point reported 5 inches (125

mm) of rain, while Clark AB measured 3.5 inches (90 mm).

As Dan moved into the South China Sea, it lost its eye feature and weakened to tropical storm intensity at 110300Z (Figure 3-29-1). Tracking west-northwestward over the warm sea, the cyclone regained its convection, reformed its eye, and was again upgraded to a typhoon at 120000Z. Dan reached a peak intensity of 70 kt (36 m/sec) six hours later. The typhoon weakened slightly as it approached and passed 60 nm (110 km) to the south of Hainan Island. As Dan approached the coast of central Vietnam, increased mid- to upper-level shear elongated the cloud shield and weakened the system. Dan made landfall on the central coast of Vietnam at 131200Z, and at that time JTWC issued a final warning. The circulation dissipated in the mountains and the disorganized convection continued westward into Laos.

Dan, despite being only a minimal typhoon, proved to be a very destructive one. In the Philippines the Department of Social Welfare reported at least 41 people killed; 16,185 houses damaged; and, 232,555 left homeless or without livelihoods. Electrical power was lost to 95% of Metropolitan Manila because of downed power lines; "brown-outs" continued for weeks afterward. In Vietnam, Dan ripped the roofs off buildings, downed communication lines, and flooded over 320,000 acres.

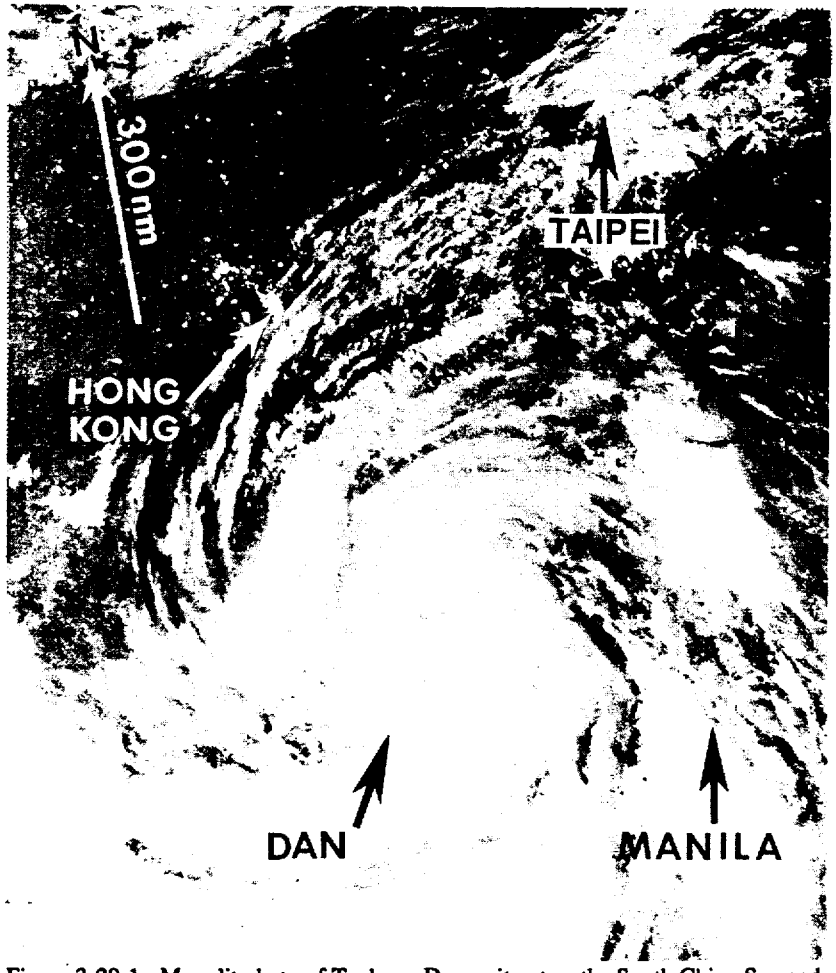

Figure 3-29-1. Moonlit photo of Typhoon Dan as it enters the South China Sea and the eye reforms (111348Z October DMSP visual imagery).